

LIS008355755B2

(12) United States Patent Kim et al.

(10) Patent No.: US 8,355,755 B2 (45) Date of Patent: Jan. 15, 2013

(54) MOBILE TERMINAL

(75) Inventors: **Ha-Yong Kim**, Chungcheongbuk-Do (KR); **Yong-Duck Cha**, Gyeonggi-Do (KR); **Jong-Hwan Kim**, Gyeonggi-Do (KR); **Tae-Wan Kim**, Gyeonggi-Do

(KR)

(73) Assignee: LG Electronics Inc., Seoul (KR)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 316 days.

(21) Appl. No.: 12/716,227

(22) Filed: Mar. 2, 2010

(65) **Prior Publication Data**

US 2010/0227650 A1 Sep. 9, 2010

(30) Foreign Application Priority Data

Mar. 3, 2009	(KR)	 10-2009-0017911
Jul. 2, 2009	(KR)	 10-2009-0060347

(51) Int. Cl. *H04M 1/00* (2006.01)

455/575.3; 455/575.4

(56) References Cited

U.S. PATENT DOCUMENTS

8,005,518 B	1 * 8/2011	Birsel et al 455/575.1
2002/0016191 A	1* 2/2002	Ijas et al 455/575
2004/0202316 A	1* 10/2004	Åbe et al 379/451
2005/0143137 A	1* 6/2005	Matsunaga et al 455/566
2010/0157518 A	1 * 6/2010	Ladouceur et al 361/679.09

^{*} cited by examiner

Primary Examiner — Jinsong Hu
Assistant Examiner — Michael Nguyen
(74) Attorney, Agent, or Firm — Lee, Hong, Degerman,
Kang & Waimey

(57) ABSTRACT

Disclosed is a mobile terminal including, first and second bodies rotatably coupled to each other, and a driving unit configured to allow a relative rotation of the first and second bodies between a closed configuration and an open configuration, the first and second bodies being overlaid by each other in the closed configuration and rotated away from each other in the open configuration, wherein the driving unit includes rotation motion units connected to each of the first and second bodies and configured to generate the relative rotation, and slide motion units cooperatively operating with the rotation motion unit and configured to relatively slide the first and second bodies with respect to the driving unit between the closed configuration and the open configuration.

16 Claims, 19 Drawing Sheets

